1. Develop an application that uses GUI components, Font and Colors

Aim: To develop a Simple Android Application that uses GUI components, Font and Colors.

Creating a new project:

1. Open Android Studio and then click on File -> New -> New project
2. Then type the Application name as “ex.no.1″ and click Next.
3. Then select the Minimum SDK as shown below and click Next.
4. Then select the Empty Activity and click Next.
5. Finally click Finish.
6. It will take some time to build and load the project.
7. After completion it will look as given below.

Designing layout for the Android Application:

1. Click on app -> res -> layout -> activity_main.xml.
2. Now click on Text as shown below.
3. Then delete the code which is there and type the code as given below.

Activity.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:orientation="vertical"
   android:layout_width="match_parent"
   android:layout_height="match_parent">

   <TextView
      android:id="@+id/textView"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_margin="30dp"
      android:gravity="center"
      android:text="Hello World!"
      android:textSize="25sp"
      android:textStyle="bold" />

   <Button
      android:id="@+id/button1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_margin="20dp"
      android:gravity="center"
      android:text="Change font size"
      android:textSize="25sp" />
   <Button
      android:id="@+id/button2"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_margin="20dp"
      android:gravity="center"
      android:text="Change color"
      android:textSize="25sp" />
</LinearLayout>
```

4. Now click on Design and your application will look as given below.
5. So now the designing part is completed.

Java Coding for the Android Application:

1. Click on app -> java -> com.example.exno1 -> MainActivity.
2. Then delete the code which is there and type the code as given below.

MainActivity.java:

```
package com.example.exno1;

import android.graphics.Color;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity
{
   int ch=1;
   float font=30;
   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      final TextView t= (TextView) findViewById(R.id.textView);
      Button b1= (Button) findViewById(R.id.button1);
      b1.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            t.setTextSize(font);
            font = font + 5;
            if (font == 50)
               font = 30;
         }
      });
      Button b2= (Button) findViewById(R.id.button2);
      b2.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            switch (ch) {
               case 1:
                  t.setTextColor(Color.RED);
                  break;
               case 2:
                  t.setTextColor(Color.GREEN);
```

```
                break;
            case 3:
                t.setTextColor(Color.BLUE);
                break;
            case 4:
                t.setTextColor(Color.CYAN);
                break;
            case 5:
                t.setTextColor(Color.YELLOW);
                break;
            case 6:
                t.setTextColor(Color.MAGENTA);
                break;
        }
        ch++;
        if (ch == 7)
            ch = 1;
    }
  });
 }
}
```

4. So now the Coding part is also completed.

5. Now run the application to see the output.

Output :

2. Develop an application that uses Layout Managers and event listeners.

Aim: To develop a Simple Android Application that uses Layout Managers and Event Listeners.

Procedure:

Creating a New project:

- Open Android Stdio and then click on File -> New -> New project.
- Then type the Application name as “ex.no.2″ and click Next.
- Then select the Minimum SDK as shown below and click Next.
- Then select the Empty Activity and click Next.
- Finally click Finish.
- It will take some time to build and load the project.

Creating Second Activity for the Android Application:

- Click on File -> New -> Activity -> Empty Activity.
- Type the Activity Name as SecondActivity and click Finish button.
- Thus Second Activity For the application is created.

Designing layout for the Android Application:

Designing Layout for Main Activity:

- Click on app -> res -> layout -> activity_main.xml.
- Now click on Text as shown below.
- Then delete the code which is there and type the code as given below.

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="100dp">
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="30dp"
        android:text="Details Form"
        android:textSize="25sp"
        android:gravity="center"/>
</LinearLayout>

<GridLayout
    android:id="@+id/gridLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginTop="100dp"
    android:layout_marginBottom="200dp"
    android:columnCount="2"
    android:rowCount="3">
    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="0"
        android:layout_column="0"
        android:text="Name"
        android:textSize="20sp"
        android:gravity="center"/>

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="0"
        android:layout_column="1"
        android:ems="10"/>
```

```
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="1"
        android:layout_column="0"
        android:text="Reg.No"
        android:textSize="20sp"
        android:gravity="center"/>

    <EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="1"
        android:layout_column="1"
        android:inputType="number"
        android:ems="10"/>

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="2"
        android:layout_column="0"
        android:text="Dept"
        android:textSize="20sp"
        android:gravity="center"/>

    <Spinner
        android:id="@+id/spinner"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="2"
        android:layout_column="1"
        android:spinnerMode="dropdown"/>

</GridLayout>
```

```
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentBottom="true"
        android:layout_centerInParent="true"
        android:layout_marginBottom="150dp"
        android:text="Submit"/>

</RelativeLayout>
```

- Now click on Design and your activity will look as given below.
- So now the designing part of Main Activity is completed.

Designing Layout for Second Activity:

- Click on app -> res -> layout -> activity_second.xml.
- Now click on Text as shown below.
- Then delete the code which is there and type the code as given below.

ActivitySecond.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.example.devang.exno2.SecondActivity"
    android:orientation="vertical"
    android:gravity="center">

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:text="New Text"
        android:textSize="30sp"/>
```

```
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:text="New Text"
        android:textSize="30sp"/>

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:text="New Text"
        android:textSize="30sp"/>

</LinearLayout>
```

- Now click on Design and your activity will look as given below.
- So now the designing part of Second Activity is also completed.

Java Coding for the Android Application:

Java Coding for Main Activity:

- Click on app -> java -> com.example.exno2 -> MainActivity.
- Then delete the code which is there and type the code as given below.

MainActivity.java:

```
package com.example.exno2;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Spinner;

public class MainActivity extends AppCompatActivity {
```

```
    //Defining the Views
    EditText e1,e2;
    Button bt;
    Spinner s;

    //Data for populating in Spinner
    String [] dept_array={"CSE","ECE","IT","Mech","Civil"};

    String name,reg,dept;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        //Referring the Views
        e1= (EditText) findViewById(R.id.editText);
        e2= (EditText) findViewById(R.id.editText2);

        bt= (Button) findViewById(R.id.button);

        s= (Spinner) findViewById(R.id.spinner);

        //Creating Adapter for Spinner for adapting the data from array to Spinner
        ArrayAdapter adapter= new
ArrayAdapter(MainActivity.this,android.R.layout.simple_spinner_item,dept_array);
        s.setAdapter(adapter);

        //Creating Listener for Button
        bt.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                //Getting the Values from Views(Edittext & Spinner)
                name=e1.getText().toString();
                reg=e2.getText().toString();
                dept=s.getSelectedItem().toString();

                //Intent For Navigating to Second Activity
                Intent i = new Intent(MainActivity.this,SecondActivity.class);

                //For Passing the Values to Second Activity
                i.putExtra("name_key", name);
```

```
            i.putExtra("reg_key",reg);
            i.putExtra("dept_key", dept);

            startActivity(i);

        }
    });
  }
}
```

- So now the Coding part of Main Activity is completed.

Java Coding for Second Activity:

- Click on app -> java -> com.example.exno2 -> SecondActivity.
- Then delete the code which is there and type the code as given below.

SecondActivity.java:

```
package com.example.exno2;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class SecondActivity extends AppCompatActivity {

  TextView t1,t2,t3;

  String name,reg,dept;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_second);

    t1= (TextView) findViewById(R.id.textView1);
    t2= (TextView) findViewById(R.id.textView2);
    t3= (TextView) findViewById(R.id.textView3);

    //Getting the Intent
    Intent i = getIntent();
```

```
        //Getting the Values from First Activity using the Intent received
        name=i.getStringExtra("name_key");
        reg=i.getStringExtra("reg_key");
        dept=i.getStringExtra("dept_key");

        //Setting the Values to Intent
        t1.setText(name);
        t2.setText(reg);
        t3.setText(dept);

    }
}
```

- So now the Coding part of Second Activity is also completed.
- Now run the application to see the output.

Output :

3. Develop a native calculator application.

Aim: To develop a Simple Android Application for Native Calculator.

Procedure:

Creating a New project:

- Open Android Studio and then click on File -> New -> New project.
- Then type the Application name as “ex.no.3″ and click Next.
- Then select the Minimum SDK as shown below and click Next.
- Then select the Empty Activity and click Next.
- Finally click Finish.
- It will take some time to build and load the project.

Designing layout for the Android Application:

- Click on app -> res -> layout -> activity_main.xml.
- Now click on Text as shown below.
- Then delete the code which is there and type the code as given below.

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   android:orientation="vertical"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:layout_margin="20dp">

   <LinearLayout
      android:id="@+id/linearLayout1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_margin="20dp">
```

```
    <EditText
        android:id="@+id/editText1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:inputType="numberDecimal"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:inputType="numberDecimal"
        android:textSize="20sp" />

</LinearLayout>

<LinearLayout
    android:id="@+id/linearLayout2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp">

    <Button
        android:id="@+id/Add"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="+"
        android:textSize="30sp"/>

    <Button
        android:id="@+id/Sub"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="-"
        android:textSize="30sp"/>

    <Button
        android:id="@+id/Mul"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```
        android:layout_weight="1"
        android:text="*"
        android:textSize="30sp"/>

    <Button
        android:id="@+id/Div"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="/"
        android:textSize="30sp"/>

</LinearLayout>

<TextView
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="50dp"
    android:text="Answer is"
    android:textSize="30sp"
    android:gravity="center"/>

</LinearLayout>
```

- Now click on Design and your application will look as given below.
- So now the designing part is completed.

Java Coding for the Android Application:

- Click on app -> java -> com.example.exno3 -> MainActivity.
- Then delete the code which is there and type the code as given below.

Main_Activity.java

```
package com.example.devang.exno3;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.text.TextUtils;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements OnClickListener
{
   //Defining the Views
   EditText Num1;
   EditText Num2;
   Button Add;
   Button Sub;
   Button Mul;
   Button Div;
   TextView Result;

   @Override
   public void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      //Referring the Views
      Num1 = (EditText) findViewById(R.id.editText1);
      Num2 = (EditText) findViewById(R.id.editText2);
      Add = (Button) findViewById(R.id.Add);
      Sub = (Button) findViewById(R.id.Sub);
      Mul = (Button) findViewById(R.id.Mul);
      Div = (Button) findViewById(R.id.Div);
      Result = (TextView) findViewById(R.id.textView);
```

```
        // set a listener
        Add.setOnClickListener(this);
        Sub.setOnClickListener(this);
        Mul.setOnClickListener(this);
        Div.setOnClickListener(this);
    }

    @Override
    public void onClick (View v)
    {

        float num1 = 0;
        float num2 = 0;
        float result = 0;
        String oper = "";

        // check if the fields are empty
        if (TextUtils.isEmpty(Num1.getText().toString()) ||
TextUtils.isEmpty(Num2.getText().toString()))
                return;

        // read EditText and fill variables with numbers
        num1 = Float.parseFloat(Num1.getText().toString());
        num2 = Float.parseFloat(Num2.getText().toString());

        // defines the button that has been clicked and performs the corresponding operation
        // write operation into oper, we will use it later for output
        switch (v.getId())
        {
            case R.id.Add:
                oper = "+";
                result = num1 + num2;
                break;
            case R.id.Sub:
                oper = "-";
                result = num1 - num2;
                break;
            case R.id.Mul:
                oper = "*";
                result = num1 * num2;
                break;
            case R.id.Div:
                oper = "/";
```

```
            result = num1 / num2;
            break;
         default:
            break;
      }
      // form the output line
      Result.setText(num1 + " " + oper + " " + num2 + " = " + result);
   }
}
```

- So now the Coding part is also completed.
- Now run the application to see the output.

Output:

4. Develop an application that makes use of database.

Designing layout for the Android Application:

- Click on app -> res -> layout -> activity_main.xml.
- Now click on Text as shown below.
- Then delete the code which is there and type the code as given below.

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent">
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_x="50dp"
      android:layout_y="20dp"
      android:text="Student Details"
      android:textSize="30sp" />

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_x="20dp"
      android:layout_y="110dp"
      android:text="Enter Rollno:"
      android:textSize="20sp" />

   <EditText
      android:id="@+id/Rollno"
      android:layout_width="150dp"
      android:layout_height="wrap_content"
      android:layout_x="175dp"
      android:layout_y="100dp"
      android:inputType="number"
      android:textSize="20sp" />

   <TextView
      android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="160dp"
    android:text="Enter Name:"
    android:textSize="20sp" />

<EditText
    android:id="@+id/Name"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="150dp"
    android:inputType="text"
    android:textSize="20sp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="210dp"
    android:text="Enter Marks:"
    android:textSize="20sp" />

<EditText
    android:id="@+id/Marks"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="200dp"
    android:inputType="number"
    android:textSize="20sp" />

<Button
    android:id="@+id/Insert"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="300dp"
    android:text="Insert"
    android:textSize="30dp" />

<Button
    android:id="@+id/Delete"
    android:layout_width="150dp"
```

```
        android:layout_height="wrap_content"
        android:layout_x="200dp"
        android:layout_y="300dp"
        android:text="Delete"
        android:textSize="30dp" />

    <Button
        android:id="@+id/Update"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_x="25dp"
        android:layout_y="400dp"
        android:text="Update"
        android:textSize="30dp" />

    <Button
        android:id="@+id/View"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_x="200dp"
        android:layout_y="400dp"
        android:text="View"
        android:textSize="30dp" />

    <Button
        android:id="@+id/ViewAll"
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:layout_x="100dp"
        android:layout_y="500dp"
        android:text="View All"
        android:textSize="30dp" />

</AbsoluteLayout>
```

Java Coding for the Android Application:

- Click on app -> java -> com.example.exno5 -> MainActivity.
- Then delete the code which is there and type the code as given below.

Main_activity.java

```
package com.example.exno5;

import android.app.Activity;
import android.app.AlertDialog.Builder;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends Activity implements OnClickListener
{
   EditText Rollno,Name,Marks;
   Button Insert,Delete,Update,View,ViewAll;
   SQLiteDatabase db;
   /** Called when the activity is first created. */
   @Override
   public void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      Rollno=(EditText)findViewById(R.id.Rollno);
      Name=(EditText)findViewById(R.id.Name);
      Marks=(EditText)findViewById(R.id.Marks);
      Insert=(Button)findViewById(R.id.Insert);
      Delete=(Button)findViewById(R.id.Delete);
      Update=(Button)findViewById(R.id.Update);
      View=(Button)findViewById(R.id.View);
      ViewAll=(Button)findViewById(R.id.ViewAll);

      Insert.setOnClickListener(this);
      Delete.setOnClickListener(this);
      Update.setOnClickListener(this);
      View.setOnClickListener(this);
```

```
        ViewAll.setOnClickListener(this);

        // Creating database and table
        db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE, null);
        db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno VARCHAR,name
VARCHAR,marks VARCHAR);");
    }
    public void onClick(View view)
    {
        // Inserting a record to the Student table
        if(view==Insert)
        {
            // Checking for empty fields
            if(Rollno.getText().toString().trim().length()==0||
                    Name.getText().toString().trim().length()==0||
                    Marks.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter all values");
                return;
            }
            db.execSQL("INSERT INTO student VALUES('"+Rollno.getText()+"','"+Name.getText()+
                    "','"+Marks.getText()+"');");
            showMessage("Success", "Record added");
            clearText();
        }
        // Deleting a record from the Student table
        if(view==Delete)
        {
            // Checking for empty roll number
            if(Rollno.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter Rollno");
                return;
            }
            Cursor c=db.rawQuery("SELECT * FROM student WHERE rollno='"+Rollno.getText()+"'",
null);
            if(c.moveToFirst())
            {
                db.execSQL("DELETE FROM student WHERE rollno='"+Rollno.getText()+"'");
                showMessage("Success", "Record Deleted");
            }
            else
            {
                showMessage("Error", "Invalid Rollno");
```

```
            }
            clearText();
        }
        // Updating a record in the Student table
        if(view==Update)
        {
            // Checking for empty roll number
            if(Rollno.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter Rollno");
                return;
            }
            Cursor c=db.rawQuery("SELECT * FROM student WHERE rollno='"+Rollno.getText()+"'",
null);
            if(c.moveToFirst()) {
                db.execSQL("UPDATE student SET name='" + Name.getText() + "',marks='" +
Marks.getText() +
                        "' WHERE rollno='"+Rollno.getText()+"'");
                showMessage("Success", "Record Modified");
            }
            else {
                showMessage("Error", "Invalid Rollno");
            }
            clearText();
        }
        // Display a record from the Student table
        if(view==View)
        {
            // Checking for empty roll number
            if(Rollno.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter Rollno");
                return;
            }
            Cursor c=db.rawQuery("SELECT * FROM student WHERE rollno='"+Rollno.getText()+"'",
null);
            if(c.moveToFirst())
            {
                Name.setText(c.getString(1));
                Marks.setText(c.getString(2));
            }
            else
            {
                showMessage("Error", "Invalid Rollno");
```

```
            clearText();
        }
    }
    // Displaying all the records
    if(view==ViewAll)
    {
        Cursor c=db.rawQuery("SELECT * FROM student", null);
        if(c.getCount()==0)
        {
            showMessage("Error", "No records found");
            return;
        }
        StringBuffer buffer=new StringBuffer();
        while(c.moveToNext())
        {
            buffer.append("Rollno: "+c.getString(0)+"\n");
            buffer.append("Name: "+c.getString(1)+"\n");
            buffer.append("Marks: "+c.getString(2)+"\n\n");
        }
        showMessage("Student Details", buffer.toString());
    }
}
public void showMessage(String title,String message)
{
    Builder builder=new Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}
public void clearText()
{
    Rollno.setText("");
    Name.setText("");
    Marks.setText("");
    Rollno.requestFocus();
}
}
```

5. Develop an application that makes use of notification.

Aim: To develop a Android Application that creates an alert upon receiving a message.

Creating a New project:

- Open Android Studio and then click on File -> New -> New project.

Creating Second Activity for the Android Application:

- Click on File -> New -> Activity -> Empty Activity.
- Type the Activity Name as SecondActivity and click Finish button.

Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_margin="10dp"
    android:orientation="vertical">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Message"
        android:textSize="30sp" />

    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:singleLine="true"
        android:textSize="30sp" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="30dp"
        android:layout_gravity="center"
        android:text="Notify"
        android:textSize="30sp"/>

</LinearLayout>
```

Java Coding for the Android Application:

- Click on app -> java -> com.example.exno4 -> MainActivity.

MainActivity.java:

```
package com.example.exno4;

import android.app.Notification;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity
{
   Button notify;
   EditText e;
   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      notify= (Button) findViewById(R.id.button);
      e= (EditText) findViewById(R.id.editText);

      notify.setOnClickListener(new View.OnClickListener()
      {
         @Override
         public void onClick(View v)
         {
            Intent intent = new Intent(MainActivity.this, SecondActivity.class);
            PendingIntent pending = PendingIntent.getActivity(MainActivity.this, 0, intent, 0);
            Notification noti = new Notification.Builder(MainActivity.this).setContentTitle("New
Message").setContentText(e.getText().toString()).setSmallIcon(R.mipmap.ic_launcher).setContentInte
nt(pending).build();
            NotificationManager manager = (NotificationManager)
getSystemService(NOTIFICATION_SERVICE);
            noti.flags |= Notification.FLAG_AUTO_CANCEL;
            manager.notify(0, noti);
```

```
            }
        });
    }
}
```